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THE PLANT DISEASE REPORTER

Issued By

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Volume XXV September 15, 1941 Number 17

IN THIS ISSUE

Check list revision, by Freeman Weiss, page 432.

Diseases of drug plants observed in experimental plantings in Georgia are reported by J. H. Miller, R. G. Grogan, and R. A. Bowden, page 441.

Another report on diseases of drug plants is contributed from southern California, by H. G. MacMillan, page 443.

The distribution of the gray leaf spot of tomatoes is discussed by C. F. Andrus, page 445.

The incidence of tomato diseases in eastern Virginia this year is reported by Harold T. Cook, page 446.

The apple blotch fungus survives in a quiescent state in western New York, according to W. D. Mills and F. H. Lewis, page 447.

August weather, page 449.

The present distribution of Dutch elm disease is given on the map, page 450. Other brief notes are reports on a leaf spot on Chinese cabbage in Pennsylvania, by George L. Zundel, and dwarf bunt in the West, by C. S. Holton.

CHECK LIST REVISION

Freeman Weiss

PACHISTIMA (CELASTRACEAE).

PACHISTIMA CANBYI Gray, CLIFFGREEN. Low evergreen shrub of Growth Region 27; also grown for ornament.

Sporonema oxycocci Shear, on leaves. Virginia.

PACHISTIMA MYRSINITES (Pursh) Raf., MYRTLE BOXLEAF. Similar, in Growth Regions 1, 2, 4, 9, 12, 13, 14.

Mycosphaerella pachystimae Dearn., leaf spot. Idaho.

PACHYSANDRA (BUXACEAE)

PACHYSANDRA spp. (chiefly P. TERMINALIS Sieb. & Zucc., JAPANESE PACHYSANDRA, cult. for ornament, Zone V; P. PROCUMBENS Michx., ALLEGHENY PACHYSANDRA is endemic in Growth Regions 25, 27, 28, 29, 30.

Gloesporium sp. (? conidial stage of Glomerella cingulata) leaf spot. Va.
Heterodera marioni (Cornu) Goodey, root knot.
Macrophoma pachysandrae Hutchinson, on leaves. Va.
Phyllosticta sp. and P. pachysandrae Dearn. & House, leaf spot. N.Y. to N. Car. and Va.
Sphaeropsis sp., tip blight. N.J.
Volutella sp. and V. pachysandrae Hutchinson, on leaves. Conn. to Va.

PALICOUREA (RUBIACEAE)

PALICOUREA spp. Shrubs or trees of tropical America grown for ornament in the far South.

Asterina miconicola Ryan, black leaf spot. P.R.
Meliola glabra var. psychotriae F. L. Stevens, black mildew. P.R.
M. mayagueziana F. L. Stevens, P.R.
Ophionectria palicoureae Seaver & Whetzel, on leaves. P.R.
Puccinia fallaciosa Arth., rust (II,III). P.R.
Rosellinia bunodes (Berk. & Br.) Sacc., root rot. P.R.

PALMACEAE. Assembled here are records on the minor genera and those whose names may be unfamiliar through recent nomenclatorial changes; the palm genera of major economic importance in our range, as Arecastrum, Cocos, Kentia, Phoenix, Roystonea, Sabal, Serenoa, and Washingtonia are individually listed.

Achorella attaleae F.L. Stevens, leaf spot. Canal Zone. On Attalea.
Catacauma palmicola F. L. Stevens, black leaf spot. P.R., Virgin Is. On Thrinax.
Colletotrichum gloeosporioides Penz., leaf blight. Cosmopolitan. (Conidial stage of Glomerella cingulata.)
Didymella phacidiomorpha (Ces.) Sacc., on leaves. Fla. On Coccothrinax.
Diplodia theobromae (Pat.) Nowell (D. cacaolicola Henn.), dieback, leaf spot. General in tropics.
Exosporium palmivorum Sacc., leaf spot. Ohio, N.Y., Texas.
Glomerella cingulata (Ston.) Spauld. & Schrenk., leaf spot, canker. Cosmopolitan.
Graphiola phoenicis (Moug.) Poit., false smut. Widespread; on various palms.
Helminthosporium spiculiferum Ell. & Ev., on leaves. P.R. On Thrinax.
Heterodera marioni (Cornu) Goodey, root knot. Occasional; on various palms.
Meliola furcata Lév., black mildew. P.R. On Chamaerops and Thrinax.
M. elaeis F.L.Stevens and M. melanococcae F.L.Stevens, Canal Zone. On Elaeis.
M. palmicola Wint., Canal Zone, T.H. On Serenoa and Thrinax.
Mycosphaerella palmae Miles, on leaves. P.R.
Pestalotia sp., and P. palmarum Cke., on leaves. Widespread; on various palms.
Phoma maculata (Cke. & Harkn.) Sacc., on leaves. Calif.
Phomopsis spp. (P. arecae Syd. and P. palmicola (Wint.) Sacc.), dieback and leaf spot. Md., N.J. On Livistona.
P. pritchardiae (Cke. & Harkn.) Sacc., on leaves. Calif. On Pritchardia.
Phyllosticta sp., leaf spot. Fla. On various palms.
Phytophthora palmivora Butl., wilt. Fla.
Polyporus nivosellus (Murr.) Stevenson, wood rot. P.R.
Thielaviopsis paradoxa (DeSeynes) Hohn., root rot. Fla. (Conidial stage of Ceratostomella paradoxa Dade.)

PANDANUS (PANDANACEAE)

PANDANUS spp., SCREW-PINE. Tropical trees or shrubs; P. UTILIS Bory furnishes edible fruit and fiber; it and P. VEITCHI Dall. are commonly grown in juvenile stages as conservatory and house plants.

Botryosphaeria ribis var. chromogena Shear et al., on stems. T.H.

PANDANUS -- continued.

Colletotrichum gloeosporioides Penz. (C. omnivorum Hals.) on leaves. Cosmopolitan.
Diplodia theobromae (Pat.) Nowell (D. natalensis Pole-Evans), on leaves. Widespread in tropics.
Macrophoma pandani (Lév.) Berl. & Vogl., leaf spot. Calif., Fla.
Melanconium pandani Lév., leaf spot. Fla., Md., T.H.
Pestalotia palmarum Cke., on leaves. Fla.
Phomopsis sp., leaf spot. N.J.
Phyllosticta pandanicola Young, leaf spot. P.R.
Physalospora pandani Ell. & Ev., on leaves. Tenn.
Schizochora pandani F.L.Stevens, on leaves. T.H.
Trametes corrugata (Pers.) Bres., wood rot. T.H.
Volutella mellea Clark, on leaves. N.Y.

PARITI (MALVACEAE)

PARITI TILIACEUM (L.) St. Hil. (=HIBISCUS TILIACEUS L.), EMAJAGUA. Shrub or small tree of tropical regions, grown for fiber and as hedge plant.

Cercospora hibisci Tr. & Earle, leaf spot. P.R.
Irenopsis coronata (F.L.Stevens) Speg., black mildew. P.R.
Phyllachora minuta P.Henn., black leaf spot. P.R.

PARKINSONIA (LEGUMINOSAE)

PARKINSONIA spp. Small spiny trees of tropical America, especially P. ACULEATA L., JERUSALEM-THORN, grown for hedges and locally naturalized in Growth Regions 10, 11, 16, 17, 20, 30, and in P.R.

Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Cylindrosporium parkinsoniae Heald, leaf spot. Texas.
Phoradendron californicum (Pursh) Nutt., mistletoe. Calif., Texas.
Phyllosticta parkinsoniae Ell. & Ev., leaf spot. Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Ariz., Texas.

PAROSELA (LEGUMINOSAE)

PAROSELA (Dalea) spp. Shrubs or small trees, and some herbs, of the Western Plains and Southwestern Deserts; P. SCHOTTII (Torr.) Heller, MESA DALEA, and P. SPINOSA (Gray) Heller, SMOKETREE, are grown for ornament in the Southwest.

PAROSELA -- continued.

Cercospora daleae Ell. & Kell., leaf spot. Kans.
Phoradendron californicum (Pursh) Nutt., mistletoe. Calif. to Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Puccinia andropogonis Schw. var. onobrychidis (Burr.) Arth., rust (O,I). On P. enneandra, S. Dak. to Kans. (II and III on Andropogon spp.)
P. paroselae Cummins, rust (II,III). On P. mollis, Calif.

PARTHENIUM (COMPOSITAE)

PARTHENIUM ARGENTATUM Gray, GUAYULE. Low shrub of S.W. U.S. and Mexico, cult. for rubber; including P. INCANUM H.B.K.

Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Poria medulla-panus Pers. ex Fr. and P. pulchella (Schw.) Cke., on dead branches. Calif.
Puccinia parthenii (Speg.) Arth., rust (II,III). Texas.

PARTHENIUM INTEGRIFOLIUM L., AMERICAN FEVERFEW. Perennial herb, sometimes grown for ornament.

Albugo tragopogonis DC. ex S.F. Gray, white-rust. Iowa.
Coleosporium terebinthinaceae (Schw.) Arth., rust (II,III). Va. to Ga. and La. (O and I on Pinus spp.)

PASSIFLORA (PASSIFLORACEAE)

PASSIFLORA spp. with edible fruit, chiefly P. EDULIS Sims, PURPLE GRANADILLA, P. QUADRANGULARIS L., GIANT GRANADILLA, P. LAURIFOLIA L., WATER-LEMON, P. LIGULARIS Juss., SWEET GRANADILLA. Tropical American vines, grown in the tropics generally, and in S. Fla. and S. Calif. occasionally, for edible fruit.

Colletotrichum gloeosporioides Penz. (also reported as Gloeosporium sp.), stem & leaf spot. Fla.; seedling blight. P.R.
C. passiflorae Stevens & Young, on leaves and fruit. T.H.
Heterodera marioni (Cornu) Goodey, root knot. Fla.
Sclerotinia sp., collar rot. Calif.
Chlorosis -- suspected virus. P.R.

PASSIFLORA spp., cult. for ornament in tropical America and occasionally in S. U.S., especially P. CAERULEA L.

(Aecidium passifloricola P. Henn.): Puccinia scleriae
Asterina arnaudia Ryan and A. megalospora Berk. & Curt., black leaf spot, P.R.
Cercospora biformis Pk., leaf spot. P.R.

PASSIFLORA -- continued.

Helminthosporium stahlii F.L. Stevens, leaf spot. P.R.
Heterodera marioni (Cornu) Goodey, root knot. Calif.
Phyllosticta sp., leaf spot. N.J.
P. superficiale F. L. Stevens, on leaves. P.R.
Puccinia scleriae (Pazsche) Arth., rust (0,I). Canal Zone, P.R.
(II and III on Scleria spp.)
Septoria fructigena Berk. & Curt., on fruits. P.R., S. Car.

PASSIFLORA spp., native in U.S., especially P. INCARNATA L., MAYPOP, and P. LUTEA L., Eastern and Southern States.

Cercospora biformis Pk., leaf spot. Ark., N. Car., P.R.
C. fuscovirens Sacc., Md. to Mo. and Texas.
C. regalis Tharp, Texas.
C. truncatella Atk. Ala., N. Car., Texas.
Gloeosporium fructigenum Berk., leaf spot. La. (Conidial stage of Glomerella cingulata ?)
Heterodera marioni (Cornu) Goodey, root knot.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Sclerotium rolfsii Sacc., Southern blight. Fla.

PAULLINIA (SAPINDACEAE)

PAULLINIA spp. Climbing shrubs of tropical America, grown for ornament.

Meliola paulliniae F.L.Stevens, black mildew. Canal Zone, P.R.
M. sapindacearum Speg., P.R.
Meliolina paulliniae F.L.Stevens, on leaves. P.R.
Puccinia arechavalatae Speg., rust (III). P.R.

PAULOWNIA (SCROPHULARIACEAE)

PAULOWNIA TOMENTOSA (Thunb.) Steud., PAULOWNIA, PRINCESS-TREE. Tree of China, cult. for ornament, Zone V; also locally naturalized in Eastern States from N.Y. to Ga.

Ascochyta paulowniae Sacc. & Brun., leaf spot. Md.
Phomopsis (Phoma) imperialis (Sacc. & Roum.) Grove, on twigs. N.Y.
Phyllosticta paulowniae Sacc., leaf spot. Ala., Md., N.Y.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., on branches. Md.
Polyporus spraguei Berk. & Curt., wood rot. Ala.
P. versicolor L. ex Fr., Md.

PAVONIA (MALVACEAE)

PAVONIA spp. Shrubs or herbs of subtropical regions, grown for ornament;

PAVONIA -- continued.

P. LASIOPETALA Scheele, occurs in Growth Regions 17, 20, 30 and several S. American spp. are locally naturalized in S. U.S.

Asterina solanicola Berk. & Curt., black leaf spot. P.R.
Kuehneola malvicola (Speg.) Arth., rust (II,III). P.R., Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Puccinia heterospora Berk. & Curt., rust (III). Canal Zone, P.R.
(Uromyces pavoniae Arth.): Puccinia heterospora.

PERAPHYLLUM (ROSACEAE)

PERAPHYLLUM RAMOSISSIMUM Nutt., SQUAW-APPLE. Deciduous shrub of Growth Regions 4, 12, 13, 14.

Gymnosporangium inconspicuum Kern, rust (O,I) on leaves & fruit. Colo. (III on Juniperus utahensis.)
G. nelsoni Arth., rust (O,I) on leaves & fruits. Colo., Utah. (III on Juniperus spp.)
Septoria peraphylli Pk., leaf spot. Utah.

PERSEA (LAURACEAE)

PERSEA AMERICANA Mill., AVOCADO. Tree of tropical America, cult. for edible fruit, chiefly in Calif., Fla., P.R. and T.H. Three types or botanical vars. are recognized, which are, in increasing order of cold resistance, West Indian, Guatemalan, and Mexican (P. americana var. drymifolia (Schlecht. & Cham.) Blake.

Alternaria sp., fruit rot. Calif.
Armillaria mellea Vahl ex Fr., root rot. Calif.
Botryosphaeria ribis var. chromogena Shear et al. (Dothiorella gregaria Sacc.), branch canker, fruit rot. Calif.
Cephaleuros virescens Kze., algal leaf spot, green scurf. Fla., P.R.
Cercospora sp. (? C. purpurea Cke., C. perseae Ell. & Mart.), spot or blotch of leaves & fruit. Fla., Texas, T.H. (Cladosporium citri Massee, on this host); Sphaceloma perseae
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Colletotrichum gloeosporioides Penz., black spot and ripe rot of fruit, also on leaves & twigs. General. Texas. (Conidial stage of Glomerella cingulata.)
Diplodia theobromae (Pat.) Nowell (D. cacaoicola Henn., D. natalensis Pole-Evans), dieback, stem-end rot of fruit). Fla., West Indies. (Conidial stage of Physalospora rhodina.)

PERSEA -- Continued

Dothiorella spp., stem-end rot, Fla.; surface rot, ripe rot, also on leaves & twigs, Calif. (The California form is identified as the conidial stage of Botryosphaeria ribis var. chromogena; the Florida form is considered a different strain.)
Fusarium spp., fruit rot, bark disease. Calif.
Gloeosporium sp., rusty blight. T.H.
Glomerella cingulata (Ston.) Spauld. & Schrenk., anthracnose (leaf and fruit spot), dieback. General.
Helminthosporium sp., smudgy spot (green twigs, rarely leaves & fruit.) Calif.
Heterodera marioni (Cornu) Goodey, root knot. (Resistant.)
Irene perseae (F.L.Stevens) Toro, black mildew. Fla., P.R.
Mycosphaerella perseae Miles, leaf spot. P.R. (A Mycosphaerella stage is associated with Cercospora leaf spot in Fla.)
Oidium sp., powdery mildew. Fla.
Penicillium expansum Lk. ex Thom, blue mold dry rot. Calif.
Pestalotia (Pestalozzia) spp., leaf & fruit spot. Fla., Texas; seedling blight. P.R.
Phomopsis sp., stem-end rot. Fla., Texas.
Phyllachora gratissima Rehm, black leaf spot. P.R.
Phyllosticta sp., leaf spot. Fla.
P. micropuncta Cke., Ala.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora fusca N.E. Stevens, on branches. Fla.
P. obtusa (Schw.) Cke., canker, dieback. T.H.
P. rhodina (Berk. & Curt.) Cke., on branches. Fla.
Phytomonas syringae (Van Hall) Bergey, fruit spot, Calif.
Phytophthora cactorum (Leb. & Cohn) Schroet., collar rot, trunk canker. Calif. P.R.
P. cinnamomi Rands, root rot, decline disease. Calif.; seedling blight. P.R.
P. citrophthora (Sm. & Sm.) Leonian, fruit rot. Calif.
P. parasitica Dastur, collar rot. Fla.
Rhizopus nigricans Ehr., fruit rot. Cosmopolitan.
Sclerotinia sclerotiorum (Lib.) DBy., collar rot. Calif.
Sclerotium rolfsii Sacc., seedling blight. Fla.
Sphaceloma perseae Jenkins, scab (fruit & foliage). Fla., Texas, West Indies.
Dieback (nonparasitic; see also Colletotrichum, Diplodia, and Phytophthora above) -- copper deficiency. Fla.
Fruit spots & blemishes (nonparasitic): Carapace spot, attributed to abrasion of young fruits, Calif.; end spot, attributed to desiccation of young fruits and overmaturity, Calif.; Thompson spot, to unknown physiological factors, Calif.; flesh-darkening, to low temperature, Calif.; russetting, cause unknown. Fla.
Little-leaf, rosette -- zinc deficiency. Calif., Fla.
Melanorhiza (water injury) and asphyxiation -- defective drainage and aeration. Calif.
Mottle leaf -- nutritional deficiency. Calif.
Sun-blotch -- virus. Calif.

PERSEA -- continued.

PERSEA BORBONIA (L.) Spreng., REDBAY (including P. PUBESCENS (Pursh) Sarg., SWAMP-BAY). Evergreen trees of Growth Regions 17, 20, 28, 29, 30, 31.

Asterina delitescens Ell. & Mart., black leaf spot. Va. to Fla. and Texas.
Botryosphaeria ribis (Tode ex Fr.) Gross. & Dug., on branches. Fla.
Cephaleuros virescens Kze., green scurf. Gulf States.
Cercospora purpurea Cke., leaf spot. Ga. to Fla. and Miss.
Coccoidella scutula (Berk. & Curt.) Höhn., on leaves. N. Car. to Fla.
Coryne gelatinosa (Ell. & Mart.) Rehm, on leaves. Fla.
Englerula carnea (Ell. & Mart.) Höhn., black leaf spot. Fla.
Helminthosporium fumosum Ell. & Mart., on leaves. Fla.
Irenopsis martiniana (Gail.) F.L.Stevens, black mildew. Ala., Fla., Miss.
Lembosia rugispora Tr. & Earle, black mildew. Miss., N.Car.
Meliola amphitricha Fr., black mildew. Fla., Miss.
Mycosphaerella exutans (Cke.) Miles, on leaves. Texas.
Pestalotia sp., on leaves. General.
Phyllosticta micropuncta Cke., leaf spot. Md. to Fla. and Texas.
Polyporus hirsutus Wulf. ex Fr., and P. mutabilis Berk. & Curt., wood rot. Fla.

PHILADELPHUS (SAXIFRAGACEAE)

PHILADELPHUS spp., MOCKORANGE, SYRINGA. Deciduous shrubs including about 10 native spp. in the U.S., most of which have ornamental value and have been introduced into cult., hardy in Zone IV; of these the best known is P. GRANDIFLORUS Willd.; and also several European (P. CORONARIUS L.) and E. Asian spp., together with hybrids, widely grown for ornament, Zones IV and V.

Ascochyta philadelphi Sacc. & Speg., leaf spot. N.Y.
Botrytis cinerea Pers., flower & shoot blight. Cosmopolitan in humid regions.
Cercospora angulata Wint., leaf spot. Mo., Texas.
Diplodia microspora Berk. & Cke., on twigs. Me.
Gymnosporangium speciosum Pk., rust (O,I). Colo., N.Mex., Texas, Utah. On P. argyrocalyx Woot., P. microphyllus Gray and P. occidentalis Nels.; P. coronarius is susceptible. III on Juniperus spp. (monosperma, pachyphlaea, and utahensis).
Heterodera marioni (Cornu) Goodey, root knot. Md.
Nectria cinnabarina Tode ex Fr., on twigs. Me., Pa.
Phomopsis landeghemiae (Sacc.) Höhn., on twigs. Me., Va. (Conidial stage of Diaporthe eres Nit.)

PHILADELPHUS -- continued.

Phyllactinia corylea Pers. ex Karst., powdery mildew. Mont., Wash.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Ramularia philadelphi Sacc., leaf spot. Texas, Wash.
Sarcinella heterospora Sacc., sooty blotch. Fla.
Septoria philadelphi Ell. & Ev., leaf spot. Idaho, Iowa, Mont., Wash.
Sphaeropsis syringae (Fr.) Pk. & Clinton, on twigs. N.Y.

PHILODENDRON (ARACEAE)

PHILODENDRON spp. Woody climbers of tropical America, some of which are cult. in juvenile form as conservatory and house plants.

Colletotrichum philodendri P. Henn. (? Gloeosporium philodendri Speg.), leaf spot. N.J., Canal Zone, P.R. (? conidial stage of Glomerella cingulata.)
Meliola philodendri F.L.Stevens, black mildew. P.R.
Scolecopeltella microcarpa Speg., on leaves. P.R.
Trichopeltopsis reptans (Berk. & Curt.) Höhn., black leaf spot. P.R.

PHOENIX (PALMACEAE)

PHOENIX CANARIENSIS Chabaud., CANARY DATE PALM. Native of Canary Is., frequently grown as a lawn tree in S. U.S., and as a pot plant under glass.

Alternaria sp., leaf spot. Fla.
Armillaria mellea Vahl ex Fr., root rot. Calif.
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Exosporium palmivorum Sacc., leaf spot. Fla., La., Texas.
Graphiola phoenicis (Moug.) Poit., flase smut. Widespread.
Heterodera marioni (Cornu) Goodey, root knot. Ariz.
Penicillium vermoeseni Biourge, canker. Calif.
Pestalotia palmarum Cke., leaf spot. Fla.

PHOENIX DACTYLIFERA L., DATE PALM. Native of Mediterranean region, commercially cult. for fruit in Ariz. and Calif., and for ornament in S. U.S. and tropical America.

Alternaria sp. and A. citri Ell. & Pierce, brown spot of fruit. Ariz., Calif., Texas.
Aspergillus niger Van Tiegh., calyx-end rot. Calif., Wash.
Auerswaldia palmicola Speg., on leaves. P.R.
Catenularia fuliginea Saito, fruit rot. Ariz., Calif.
Ceratostomella sp., root rot. Calif.
C. paradoxa Dade (Thielaviopsis paradoxa (DeSeynes) Höhn.), black scorch, heart bud rot. Ariz., Calif.

PHOENIX -- continued.

Colletotrichum gloeosporioides Penz., on leaves. Texas.
Diplodia phoenicum (Sacc.) Fawcett & Klotz (? D. natalensis (Pole-Evans), leaf-stalk rot, shoot blight, fruit rot. Ariz., Calif.
Exosporium palmivorum Sacc., leaf spot. Gulf States.
Fusarium spp. (F. moniliforme Sheldon and F. semitectum Berk. & Rav. ? F. lateritium Nees), inflorescence blight, fruit rot. Ariz.
Graphiola phoenicis (Moug.) Poit., leaf spot, false smut. Widespread.
Helminthosporium molle Berk. & Curt., brown spot of fruit. Ariz., Calif.
Heterodera marioni (Cornu) Goodey, root knot. Calif.
(Macrophoma phoenicum Sacc.): Diplodia phoenicum.
Meliola furcata Lév., black mildew. P.R.
Omphalia pigmentata Bliss and O. tralucida Bliss, decline disease. Calif.
Penicillium roseum Lk., fruit rot. Ariz., Calif.
Pestalotia (Pestalozzia) sp., leaf spot. Calif., Texas.
Phomopsis phoenicola Trav., fruit rot. Calif.
Phymatotrichum omnivorum (Shear) Dug., on roots, doubtfully pathogenic. Ariz., Calif.
Poria spp., wood rot. Ariz., Calif. Spp. reported include: P. ambigua Bres., P. ravenelae (Berk. & Br.) Sacc., P. versipora (Pers.) Romell.
(Thielaviopsis paradoxa (DeSeynes) Höhn.): Ceratostomella paradoxa.

(Division of Mycology and Disease Survey)

DISEASES OF MEDICINAL HERBS AT THE COLLEGE OF AGRICULTURE ATHENS, GEORGIA

J. H. Miller, R. G. Grogan, and R. A. Bowden

Experimental plantings of medicinal herbs have been made this year in order to replace the European importations that have been cut off by the present World War. Total plantings occupied 24 acres. This was broken up into 7 acres of sage (Salvia officinalis), 3 acres of henbane (Hyoscyamus niger), 1.3 acres each of anise (Pimpinella anisum), basil (Ocimum basilicum), belladonna (Atropa belladonna), catnip (Nepeta cataria), carduus (Carduus benedictus), dill (Anethum graveolens), fennel (Foeniculum vulgare), jimson weed (Datura stramonium), marjoram (Majorana hortensis), and senna (Cassia spectabilis). Besides the above there was planted 1/12 acre of each of the 12 species. This last was the only plot irrigated.

The belladonna and henbane were started in the greenhouse, then transplanted to pots under shade and when about five inches high set in

the field. The seeds of all other herbs were planted directly in the field. Plantings were made during the last week in April with the exception of the irrigated acre which was planted May 1.

The rainfall was extremely variable during the entire growing season. The totals were .54 inches for May, 3.77 inches for June, and 8.15 inches for July. The May rainfall occurred mostly on the seventh, after that only .69 inches fell up until June 22. Most of the seed failed to germinate or else came up and died in this drought, the only exceptions being carduus and jimson weed. These two plants came through very well in spite of the dry weather.

The most important disease was southern bacterial wilt (Bacterium [Phytomonas] solanacearum). The pathogen has been in the greenhouse for several years and in the soil of the part of the farm that was irrigated. This last plot had tomatoes on it 2 years ago and the upper part showed much wilt then. The form of the organism is the one common in south Georgia, which produces wilt on tomatoes, peanuts and other crops, but apparently does not affect tobacco.

This disease started on the belladonna after the plants were potted and placed in cold frames. This was during the drought in early June. The symptoms consisted of wilting from root infections and later chiefly die-back from infections on stems and leaves. Plants went down rapidly and about 80 percent died at this time and most of the others showed some symptoms. The best of the remaining plants were then set in the field. The irrigated 1/12 acre plot was set 5 times, and by September 1 only one plant was living. The 1.3 acres was a total loss.

The henbane followed the same course as the belladonna. There were no plants living in the field by August 1.

Bacterium solanacearum was isolated and identified from these 2 hosts and positive inoculations were secured on tomato and belladonna plants.

The jimson weed in the irrigated plot germinated and produced a perfect stand, but by September 1 at least 40 percent of the plants were dying with the above bacterial wilt, which started in the root system. The 1.3 acre plot, on the other hand, showed only a small amount of wilt in one low part of the field, and on September 9 the stand was fair but practically all plants were completely defoliated with leafspot (Macrosporium [Alternaria] crassa).

The other important disease was southern blight (Sclerotium rolfsii) on carduus. On the irrigated twelfth-acre the plants started dying in late July and on September 9 about 30 percent had wilted. On the 1.3 acre plot the carduus plants grew very well until late August when they started dying, apparently from wire worms in the root and lower stem. This insect has caused serious trouble in the

plantings in Walker County.

The few plants among the other herbs that survived the early drought showed no particular disease in the field. However, small quantities of each have been carried for seed stock in the greenhouse where they have not been so free. Dill and fennel damped-off to the extent of about 30 percent (Rhizoctonia solani), and catnip when almost mature in early September showed 10 percent wilt from an undetermined Fusarium sp. Approximately 50 percent of the anise plants in pots died from a crown rot that has also not been identified. Dodder (Cuscuta sp.) was a serious problem on belladonna, dill, and henbane.

It is apparent from these observations that belladonna, henbane, and jimson weed cannot be grown in fields infested with Bacterium solanacearum, and that carduus will be limited by the presence of wireworms and Sclerotium rolfsii. The other herbs did not survive the drought in sufficient quantity upon which to base disease observations.

SOME DISEASES OF DRUG PLANTS AND HERBS OBSERVED IN SOUTHERN CALIFORNIA

H. G. MacMillan

During the past year small acreages of herb and drug plants have been planted in Southern California, some of which have been attacked by pathogenic organisms. It may be that inexperience on the part of the grower in handling these plants in the seed-bed and in flats has been a contributing factor in the introduction of disease. As certain plants become perennials under local conditions it is extremely important that good horticultural practices be followed in the seed-bed and in the flats, so that the plants reach the field in a clean condition.

ATROPA BELLADONNA L.

Damping-off, Rhizoctonia sp., probably R. solani, caused loss in flats, and in the field with plants recently planted. Rootlets were thoroughly infected with strands of the fungus. Sclerotia formed at the soil line.

Damping-off, Thielavia basicola (Berk and Br.) Zopf, was causing loss in flats. The plants were attacked at about the soil line, with wilting and dying resulting. Spores of the fungus were present on the host tissue. The rootlets deeper in the soil did not appear to be infected.

Downy mildew, Peronospora hyoscyami DBy., attacked leaves on the under surface and gradually killed them. It was found only on

plants in flats, probably as a result of over-watering.

Root rot, Fusarium sp. Plants in flats and in the field were attached by fusarium. In flats the rootlets are infected throughout their length and rot quickly, the plants dropping over somewhat as if attacked by a damping-off organism. In the field the immediate effect is less marked. Young plants wilt and die slowly, the roots rotting completely. However, many infected plants are not killed at once, but persist over a period of time, dying slowly and finally, without productivity, presenting throughout an aspect of definite decline and disease.

In one field planted in May 1940 all the plants in the field have died or are slowly dying of a root rot. The roots are devoid of fine rootlets and side roots, all being killed. The larger, semi-fleshy roots are rotting slowly from the extremities, the tissue immediately above the decayed and blackened portion appearing quite normal and uncolored except in the thin line of vascular tissue. Mycelium of Fusarium is usually found at these marginal places. Bacteria are always found in the apparently healthy tissue ahead of the place where the Fusarium mycelium is available. At points along the roots where rootlets have rotted away, the local tissue is discolored to the pericycle, and generally yields a bacterium, but seldom a Fusarium. It seems quite probable that some of the attack can be regarded as a bacterial rot. The same plants are often attacked in the crowns, the disease progressing downward into the root, showing symptoms similar to the root infection and the diseased tissue yielding the same organisms.

Because of the absence of fine roots, water appears to be absorbed directly into the large spongy roots. With the application of irrigation water adventitious buds appear which develop into small stems with a few leaves, but these fail in time, the crown becoming covered with dead, dried woody stems, each one a potential place of infection. The plants finally die, and the roots rot away leaving only the shreds of fibrous tissue.

Root knot, Heterodera marioni. Plants are infested in flats and in the field. In the small roots of young plants quantities of eggs are often seen, as well as the larvae. In the field the rootlets are considerably deformed by the nematode. Nematodes are commonly found in the decayed tissue of the roots of old plants.

It seems possible that the nematode may be the precursor of fusarium and bacterial infection.

Psyllid Yellows, induced by Paratrioza cockerelli. The nymphs of the insect are frequently observed on the underside of leaves. Not all leaves show symptoms due to infestation. However, where there is a sufficient infestation the leaves turn the characteristic purple color

associated with this disease. It is quite like the early symptoms observed on potatoes, but without attaining any definite yellow coloring.

A thrip, probably Thrips tabaci has been found on the plants, but definite diseases associated with this insect have not been identified.

DIGITALIS PURPUREA L.

Root rot, Fusarium sp., was causing complete rotting of the roots, with slow wilting and death of the plants in flats.

Root knot, Heterodera marioni, infested the small roots of young plants.

(Division of Fruit and Vegetable Crops and Disease)

GEOGRAPHICAL EXTENSION OF STEMPHYLIUM SOLANI ON TOMATOES

C. F. Andrus

A survey of 13 southeastern States, conducted in July and August 1941 was intended to show the relative importance of the several familiar tomato leaf-spotting fungi. Although the data collected are too fragmentary to serve the original purpose of determining relative importance of tomato leaf pathogens, they do reveal one highly significant fact, namely, a wide extension in the reported geographical range of gray leafspot caused by Stemphylium solani Weber.

Samples of tomato leafspots were solicited from the 13 collaborators of the Southeastern Regional Vegetable Breeding Laboratory. Collections were actually received from only five: Virginia (by H. T. Cook), North Carolina (by R. Schmidt), Tennessee (by R. A. Hyre and J. M. Epps), Louisiana (by F. D. Cochran), and Texas (by P. A. Young). Stemphylium solani was found in the material from Virginia, North Carolina, Tennessee, and Louisiana -- this constituting the first record of its occurrence in those States.

The history of the gray leafspot disease caused by Stemphylium solani may prove to be an interesting one to follow. The disease was first recognized in Florida in 1924 by G. F. Weber[1]. The first record of its occurrence outside of Florida was made in South Carolina in 1939[2]. It has occurred in field plots of the Vegetable Breeding Laboratory at Charleston, South Carolina, each year since 1938. This 1941 record extends the known range north to the eastern shore of

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1/ Weber, G.F., S. Hawkins, and D.G.A. Kelbert. Gray leafspot, a new disease of tomatoes. Florida Agr. Exp. Stat. Bull. 249. 35 p. illus. 1932.

2/ Pl. Dis. Reporter 23 (18): 308, and 24 (23): 475.

Virginia and west to the Mississippi. Interested readers are urged to make a special search of tomato foliage in their localities in order to detect further extension of Stemphylium solani to the north and west.

(Division of Fruit and Vegetable Crops and Diseases).

TOMATO DISEASES IN THE NORFOLK AREA AND ON THE EASTERN SHORE OF VIRGINIA

Harold T. Cook and T. J. Nugent

Tomato leaf spot diseases have been especially prevalent and destructive in the vicinity of Norfolk and on the Eastern Shore of Virginia this year. The early part of the season was characterized by extremely dry weather followed by numerous cloudy and rainy days in June and July.

Bacterial canker (Phytomonas michiganensis) was found in two large fields in Northampton County on the Eastern Shore on July 9. At that time about 5 percent of the plants were severely infected, the stems being badly discolored and the leaves wilted. Some leaf spotting was present, but no fruit spots were found. The disease did not spread very much, but when examined a week later the leaf spots were more abundant and some of the fruit bore the halo type of spots. The disease was apparently seed-borne as both fields had been set with plants grown in the South from the same lot of uncertified seed of the Stokesdale variety.

Bacterial spot (Phytomonas vesicatoria) was found in a number of fields in Northampton County on July 17. At that time all of the plants in the fields were badly affected and most of them had already lost about 80 percent of their foliage. The fruit spots that are characteristic of the disease were found on a few of the tomatoes. A survey on August 8 showed that the bacterial spot disease was present in practically all of the tomato fields in Northampton County and that it was the principal cause of defoliation. The inspector at one of the grading platforms informed us that about 50 percent of the tomatoes bore the characteristic fruit spots of this disease. Bacterial spot was also found in some fields in Accomac County, but the plants in other fields in that county were affected with septoria (S. lycopersici) leaf spot. The septoria leaf spot was also the most important disease in the Norfolk area this year. At the Eastern Shore Branch of the Virginia Truck Experiment Station at Onley, one experimental field that had been planted with home-grown plants was affected with septoria leaf spot while another field that had been planted with southern-grown plants was affected with bacterial spot.

Southern blight (Sclerotium rolfsii) was rather serious in one 10-acre field in Northampton County where it had either attacked or killed about 10 percent of the plants.

Wilt (Fusarium bulbigenum var. lycopersici) was found to be affecting about 20 percent of the plants in a 4-acre field of the red pear type of tomato in Northampton County.

Spraying tomatoes in the field for the control of leaf spot diseases is not recommended for Tidewater Virginia. The prevalence and destructiveness of the leaf spots this year naturally raises the question as to whether spraying should be recommended in the future. Observations and experiments over a period of years have shown that leaf spots are not of economic importance more often than about 1 year in 5 in Eastern Virginia. Considering the low margin of profit in the tomato crop it would not be economical to spray every year in order to obtain protection during the few years that leaf spots are destructive. The practice of delayed spraying now recommended in some States would have been of little value this year since the diseases were evidently present on the plants and had already caused most of the damage by the time the delayed sprays would have been started. The more economical and effective way to avoid losses by the bacterial spot disease and canker would be by the use of disease-free seed, clean seed beds, proper spraying or dusting in the seed bed, and crop rotation.

(Virginia Truck Experiment Station, Norfolk).

SURVIVAL OF PHYLLOSTICTA SOLITARIA IN NEW YORK

W. D. Mills and F. H. Lewis

Apple blotch was first reported in New York by Thomas in 1925 (1, 2) and 1926 (3) on apple seedlings from Iowa. Thomas reported no appreciable spread of the cankers up to October 1926 (3), but in 1927 (4) and 1928 (5) reported a very slight spread on the originally infected trees and no blotch on clean seedlings planted in a row continuous with the infected seedling at the end of three seasons.

In 1933, 200 trees were found by the senior author to be infected with blotch upon the trunk or main scaffold limbs in a McIntosh orchard in Wayne County and a smaller number of infected trees were found later in a second McIntosh orchard in Wayne County. The source of these trees could not be traced beyond the local nursery. Phyllosticta solitaria was isolated from cankers in both orchards. In the first orchard, tacks were driven in the margins of 100 cankers to determine the rate of growth. In 1937, after 4 years' growth, the cankers were reexamined by the senior author. No apparent increase had occurred in the size of the cankers but the fungus was readily isolated. In 1941, the cankers

were again examined by both authors. Only a small number of the tacks could be located after 8 years' growth but in most of these there was no apparent increase in the width of the cankers and the greatest increase was but 1/2 cm. The junior author had no difficulty in isolating the fungus. No leaf or fruit lesions have been observed.

Another apparent instance of blotch was noted in Clinton County in the Champlain Valley in 1935 on McIntosh trees from the South but isolations were not made in this instance.

Apparently under the conditions prevailing in the Lake Ontario fruit belt of western New York during the past 8 years Phyllosticta solitaria will survive but only in a quiescent state. Brief notes by the author on the survival of apple blotch in New York appeared in the Plant Disease Reporter Supplements from 1936 to 1940 (6, 7, 8, 9, 10).

References

1. Thomas, H. E. Apple blotch in New York State [Manuscript cited in] Plant Dis. Reporter Suppl. 39: 11. 1925.

2. _____ Apple blotch in New York State. Phytopath. 15: 246-247. 1925.

3. _____ Apple blotch in New York. Plant Dis. Reporter 10: 136. 1926.

4. _____ Apple blotch in New York. Plant Dis. Reporter Suppl. 52: 10. 1927.

5. _____ Apple blotch. Plant Dis. Reporter Suppl. 60: 128. 1928.

6. Mills, W. D. Apple blotch in New York State. Plant Dis. Reporter Suppl. 94: 169. 1936.

7. _____ Apple blotch. Plant Dis. Reporter Suppl. 103: 163. 1937.

8. _____ Apple blotch. Plant Dis. Reporter Suppl. 110: 222. 1938.

9. _____ Apple blotch. Plant Dis. Reporter Suppl. 118: 114. 1939. (Issued [March] 1940)

10. _____ Apple blotch. Plant Dis. Reporter Suppl. 119: 176. 1939. (Issued [Aug.] 1940).

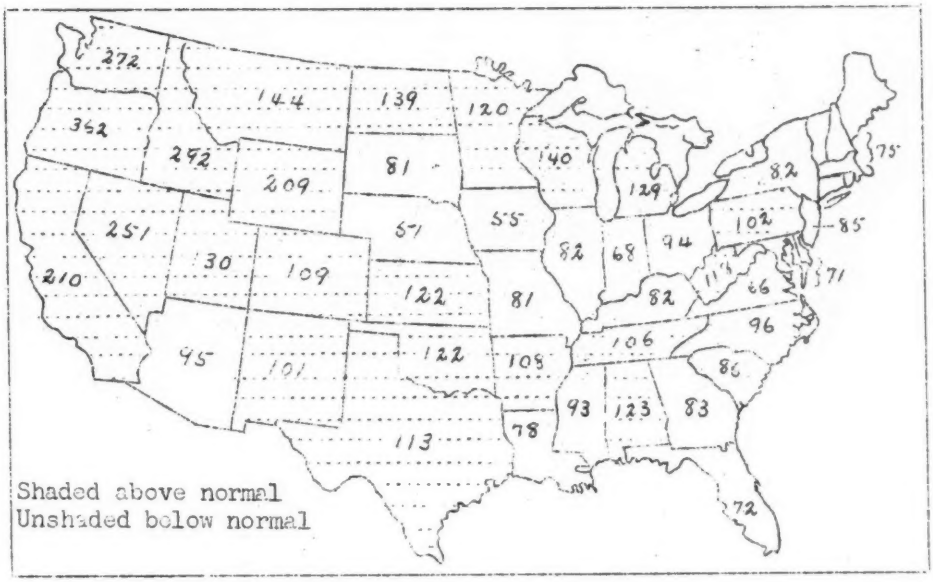


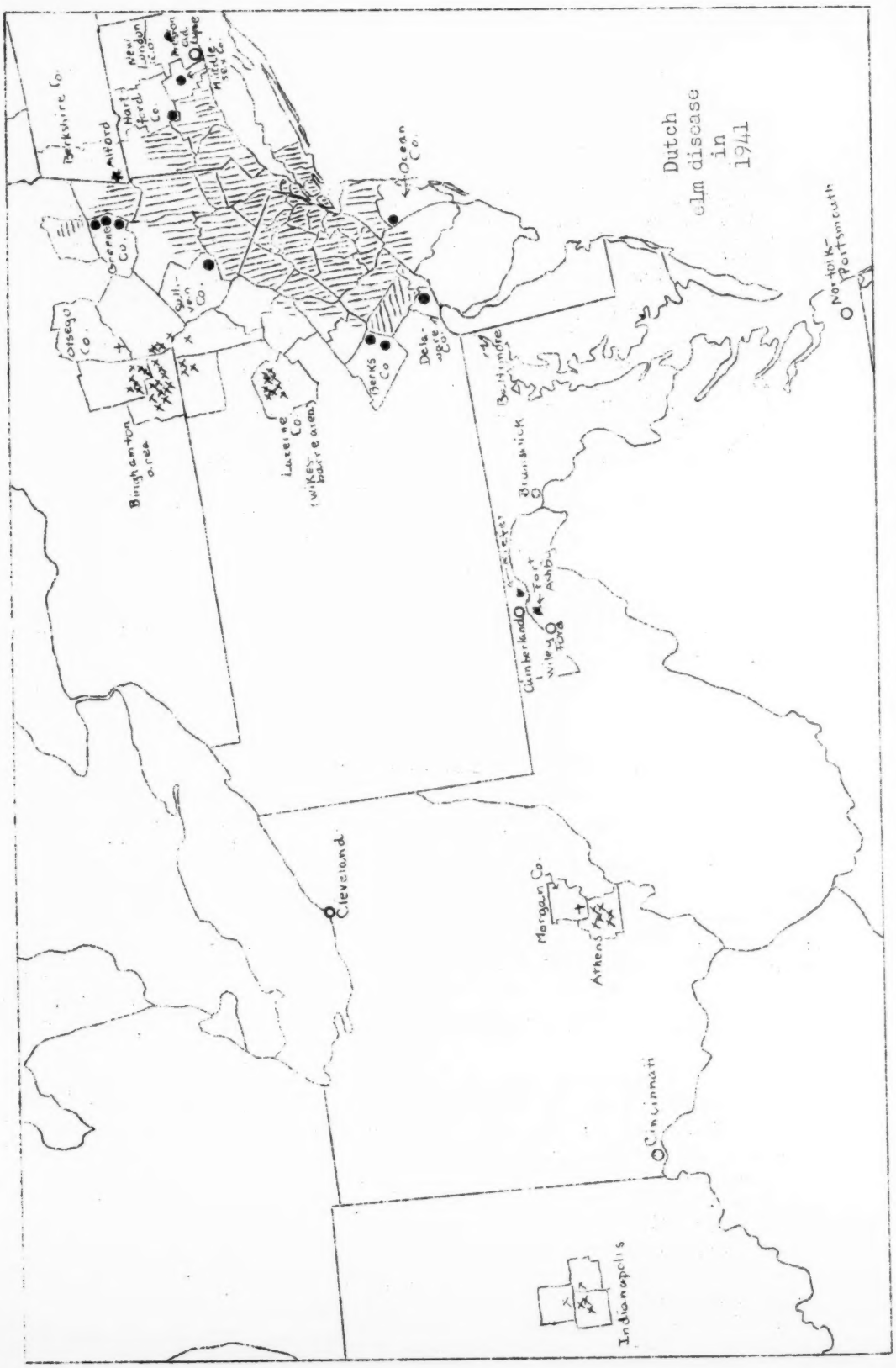
Fig. 1.--Percentage of Normal Precipitation by States August 1941.

AUGUST WEATHER

(From U. S. Department of Commerce, Weather Bureau, Weekly Weather and Crop Bulletin for week ending September 9, 1941).

For the country as a whole, August, 1941, was warmer and wetter than usual. The temperature averaged somewhat below normal in Appalachian Mountain sections, the eastern Lake region, and Northeast and near normal from the Rocky Mountains westward, except that the month was 2° or 3° warmer than normal locally in the interior of the Pacific Northwest and along the California coast. From the western Ohio, central Mississippi and lower Missouri Valleys northwestward, the monthly means were from 2° to as many as 7° above normal.

Fig. 1 shows, by States, the percentage of normal precipitation for the month. From the Mississippi Valley eastward most States had below normal, but for the more western half of the country all but 3, Nebraska, South Dakota, and Arizona, had above-normal rainfall. The relatively driest States were Nebraska, 51 percent of normal, Iowa, 55, and Virginia, 66 percent. As usual some very irregular distributions are shown, such as Kansas 122 percent and adjoining Nebraska 51; Wisconsin 140 percent and nearby Iowa 55; West Virginia, 118 and Virginia 66. The northern border States from Michigan westward had abnormally heavy rainfall.


Dutch elm disease in 1941
Berkshire Co.
Milford
Hartford
New London Co.
Middlesex Co.
Mason and Lyme
Greene Co.
Windham Co.
Otsego Co.
Binghamton area
Luzerne Co. (Wilkes-Barre area)
Berks Co.
Delaware Co.
Ocean Co.
Burlington
Brunswick
Cumberland
Fort Ashby
Wiley Ford
Norfolk
Portsmouth
Cleveland
Morgan Co.
Athens
Cincinnati
Indianapolis

BRIEF NOTES ON PLANT DISEASES

DUTCH ELM DISEASE IN 1941: The map on page 450, which has been compiled from the weekly reports of the Bureau of Entomology and Plant Quarantine for the period from September 8, 1940 to September 13, 1941, shows the spread of the Dutch elm disease (Ceratostomella ulmi) during that period, as follows:

Main infection area --

1941 extent of infection indicated by shading and dots.
Horizontal shading indicates counties added in 1940.
Dots show locations in new counties, 1941.
Star shows location of first report in Massachusetts, in Alford, 1941.

Detached areas --

Active areas: xx, with locations in new counties, 1941 -- +
Occasional infections:
New locations
1940 (at Preston, Connecticut)
1941 (Kiefer, Maryland and Fort Ashby, West Virginia).
1941 recurrence in old location (Baltimore) △
No recurrence for several years o

LEAF SPOT ON CHINESE CABBAGE IN PENNSYLVANIA: Leaf spot due to Cylindrosporium brassicae Fautr. & Roum. was very severe in one Somerset County vegetable farm. (George L. Zundel, September 2. Pennsylvania State College).

SPREAD OF DWARF BUNT OF WHEAT IN WESTERN STATES: You may be interested to know that we found dwarf bunt [Tilletia tritici] in Douglas County, Washington, this year for the first time. R. H. Bamberg also reports a new location in Montana. These observations indicate that this bunt is spreading. (C. S. Holton, Division of Cereal Crops and Diseases. August 26).